

Material Testing in Support of the ISS Electrochemical Disinfection Feasibility Study

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The International Space Station Program recognizes the risk of microbial contamination in their potable and non-potable water sources. With the end of the Space Shuttle Program, the ability to send up shock-kits of biocides in the event of an outbreak becomes even more difficult. Currently, the US Segment water system relies primarily on iodine to mitigate contamination concerns. To date, several small cases of contamination have occurred which have been remediated. NASA, however, realizes that having a secondary method of combating a microbial outbreak is a prudent investment. NASA is looking into developing hardware that can generate biocides electrochemically, and potentially deploying that hardware. The specific biocides that the technology could generate include: hydrogen peroxide, oxone, hypochlorite and peracetic acid. In order to use these biocides on deployed water systems, the project must determine that all the materials in the potential application are compatible with the biocides at their anticipated administered concentrations. This paper will detail the materials test portion of the feasibility assessment including the plan for both metals and non-metals along with results to date.